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ESTIMATING THE FINANCIAL REPRESSION INDEX FOR THE ECONOMY OF BANGLADESH: A PRINCIPAL COMPONENT ANALYSIS

Md Yousuf*[1]

[1] Deputy Director, Economic Modeling and Forecasting Wing, Research Department, Bangladesh Bank, Dhaka, Bangladesh.

ABSTRACT

Financial repression was a common practice in the past, but it became less common during the liberalization era of the 1980s and 1990s. With the rise in financial sector vulnerability following the Asian financial crisis, the Global Financial Crisis, and the COVID-19 pandemic, repressive policies have once again become popular. Bangladesh, for instance, has imposed administrative interest rate ceilings. This study aims to assess the extent of financial repression on the economy of Bangladesh, using annual time series data spanning from 1973 to 2022. An aggregate financial repression index was calculated using the principal component analytical method, including the major policy variables such as real deposit rates, interest rate restrictions, capital account restrictions, the share of state-owned commercial banks in total loans, and statutory liquidity ratio. The reliability and validity of the results were tested by comparing them with the index calculated using different policy variables. The index of financial repression indicates that Bangladesh's financial sector has undergone considerable liberalization, yet it remains subject to some degree of repression. In recent times, financial repression has intensified, particularly following the imposition of lending rate ceilings in the wake of the outbreak of the COVID-19 pandemic. Policymakers are in a position to take proper measures to liberalize the financial sector and ensure financial stability.

Keywords: *Financial Repression, Interest Rates, Bangladesh Economy*
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*Correspondence:
Md Yousuf
E-mail:
md.yousuf047@gmail.com

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Introduction

Financial repression is defined as government policies that prevent the optimal functioning of financial intermediaries (Ito, 2009). The primary objectives of implementing repressive policies include public financing through seigniorage, allocating subsidized loans to priority sectors, and maintaining the stability of the financial sector. Many countries in the world have previously encountered situations of financial repression. The Bangladeshi economy is also not exempt from this phenomenon.

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The Bangladeshi economy has grown at an average rate of above 5% over the past two decades, leading to the country's transition from a least developed to a lower-middle income country. In achieving sustainable economic growth, a vibrant financial sector plays a vital role. In this context, monetary and fiscal authorities implement different policies to maintain the stability and ensure the smooth functioning of the financial sector. Some of these policies, such as the licensing of new private commercial banks, market-based determination of interest rates, shifting towards a floating exchange rate, and slight opening of capital accounts, facilitate the liberalization of the financial sector. In contrast, other policies such as high reserve requirements, restrictions on capital outflow, capping on lending rates, and running state-owned commercial banks are considered repressive. Both types of policies are already in effect within the financial sector of Bangladesh.

Bangladesh has witnessed a series of financial reforms in the past few decades, making the country an intriguing case study in this regard. The financial sector of Bangladesh is largely comprised of banks, and the development of the banking sector is known to facilitate economic growth (Ahmed et al., 2019). The liberalization of the financial sector was primarily implemented during the 1980s and further advanced during the 1990s, with the technical assistance from the International Monetary Fund (IMF). Subsequently, in the early 21st century, the liberalization of the foreign exchange market commenced, followed by continued restructuring of the financial sector. At the same time, the government occasionally implemented repressive policies, particularly in the aftermath of the Asian financial crisis (1996-1997), the Global Financial Crisis (2007-2008), and the COVID-19 pandemic, to maintain the stability of the financial sector. In April 2020, the Central Bank of Bangladesh (Bangladesh Bank) imposed ceilings on lending rates and other repressive policies to reduce the costs of investment. However, despite the aforementioned policy changes in the financial sector, no study has been conducted to determine the extent of financial repression on the economy of Bangladesh. This study will address the existing research gap by examining patterns of financial repression, covering a list of policy variables and discussing the critical aspects of repressive policies in the Bangladeshi economy. Moreover, the results of this study will assist policymakers in making informed policy decisions regarding the liberalization of the financial sector.

This study used the principal component analytical (PCA) method, which extracts the necessary information in the form of components from the dataset. The PCA method facilitates the removal of correlation among the independent variables while reducing the number of dimensions. As a result, the PCA transformation can be readily visualized. Nevertheless, it is important to be aware of the sensitivity of the PCA method to the scaling of variables and the presence of outliers.

An aggregate index of financial repression was calculated using the PCA method, including five variables of repressive policies such as real deposit rates, interest rate restrictions, capital account restrictions, the share of state-owned commercial banks in total loans, and statutory liquidity ratio to demonstrate the extent of financial repression. The findings indicate that the Bangladeshi financial sector has experienced gradual reforms since its independence, but it continues to exert a certain degree of repression. The composite index captures the principal policy reforms of the financial sector over time.

This paper is organized as follows. Section 2 provides an explanation of the theoretical and empirical perspectives of financial repression and the variables included in the composite index. Section 3 presents the methodology used in the study, along with an explanation of

the index that was used. This section also outlines the procedure for calculating an index to capture the extent of financial repression using the PCA method, which incorporates a number of measures of repressive policies, including interest rate restrictions, capital account openness, the share of state-owned banks in total loans and statutory reserve requirements, and real deposit rates. In Section 4, the financial repression index was calculated using the PCA method. The reliability of the results was tested using a sampling adequacy test and validated by comparing them with the index calculated using different policy variables. Finally, Section 5 presents the conclusion of this paper.

Literature Review

The Concept of Financial Repression

The concept of financial repression is changing over time. The term "financial repression" was first introduced by McKinnon (1973) who defined it as a government policy regulating the financial sector through control of interest rates, allocation of resources to specific sectors, and imposition of reserve requirements. Moreover, Jafarov et al. (2019) defined financial repression as the implementation of government policies distorting the free market equilibrium of the financial sector. According to Reinhart & Sbrancia (2015), a repressed financial system is characterized by the direct or indirect imposition of interest rate ceilings, operation of state-owned banks, and restriction of access to obtain easy credit.

The government applies repressive policies to generate a substantial seigniorage from the financial sector. Such policies can be employed in many ways, including the imposition of interest rate restrictions, implementation of targeted credit programs, and establishment of government ownership in the banking industry. Furthermore, additional measures are taken during the implementation process, such as restrictions on capital movements and direct quantitative restrictions on credit allocation. The principal forms of financial repression are as follows: 1) Ceilings on lending rates and floors on deposit rates (interest rate restrictions); 2) Targeted credit programs (obligatory allocation of the minimum amount of credit to a particular sector or industry); 3) Entry barriers into the banking sector; 4) Control of international capital movements and exchange rates; 5) Government ownership of commercial banks; 6) Quantitative restrictions such as cash reserve ratio and statutory liquidity ratio; and 7) Unconventional monetary policies based on the market operation.

The government typically employs multiple forms of restrictions to enhance the effectiveness of its policies. The primary objectives of using different repressive policies include reducing the cost of public borrowing through seigniorage, allocating subsidized loans to priority sectors, and reducing financial vulnerability by establishing a stable financial environment (Jafarov et al., 2019).

The government also implements different repressive policies to protect the infant financial sector by providing support of deserving borrowers. Moreover, the authority facilitates innovation with positive externalities by ensuring an adequate supply of resources. Although the objective of such policies is beneficial, they often result in market inefficiencies. The imposition of interest rate restrictions leads to inadequate fund availability due to the reduction in the returns available to depositors and a restriction on their access to financing. The disruption of the market mechanism and misallocation of funds results in a reduction in the rate of return and investment quality. The allocation of funds to specific sectors reduces the number of beneficiaries and encourages competition for rents.

Recent Studies on the Financial Repression Index

Studies can be categorized into two groups: (a) Studies focusing on interest rate restrictions; and (b) Studies based on an aggregate index, including several repressive policies.

Studies on Interest Rate Restrictions

Calice et al. (2020) calculated the degree of bindingness of interest rate controls across various categories, including control types, legal bases, desired objectives, methods, and enforcement mechanisms. They constructed an estimated data set based on a survey of 108 countries for the most commonly used form of financial repression, namely interest rate controls. In another study, Fry (1980) estimated the cost of financial repression in developing countries using the panel regression model. He defined financial repression as the holding of interest rates below the market equilibrium level, with a particular focus on deposit rates.

Jafarov et al. (2019) empirically estimated the financial repression variable on the basis of four numerical values from 0 (the strictest controls on interest rates) to 3 (liberalized or market-based interest rates) for the control of interest rates. The financial restriction index was assigned a value of 1 if the interest rate control was less than 3, and 0 otherwise. The index was calculated for 90 countries from 1973 to 2017.

Maimbo & Gallegos (2014) found that at least 76 countries in the world have implemented interest rate restrictions on loans either in absolute terms (a fixed nominal rate) or in a relative manner (based on a benchmark rate). Using data from Kenya, Safavian & Zia (2018) found that the imposition of an interest rate cap resulted in decline in loan growth and hindered the compositional changes in loans and deposits.

In all of the aforementioned studies, the researchers considered any policy affecting the market interest rates as a form of financial repression. In addition, some studies examined the economic costs associated with the repressive policies.

Studies Based on an Aggregate Index

Using time series data from 1960 to 2001 on the Malaysian economy, Ang & McKibbin (2007) estimated the financial repression variable using the PCA method, including eight repressive policy variables. Five of the variables were related to interest rate restrictions, including the maximum and minimum deposit and lending rates as well as the maximum lending rate for priority sectors. The remaining three policy variables included targeted credit program, statutory reserve ratio, and liquidity ratio. The inverse of the composite index value was employed as a measure of financial liberalization. Following the methodology of Ang & McKibbin (2007), Huang & Wang (2011) estimated an aggregate index of financial repression using provincial-level data on China, including six policy variables. The variables included real deposit rate, interest rate control, capital account control, statutory reserve ratio, the share of state-owned banks in total loans, and the share of state-owned banks in total outstanding loans. The study revealed that the Chinese economy had been liberalized to a significant extent.

Demetriades & Luintel (1997) estimated a summary measure of financial repression of the Indian economy. Nine repressive policies were included, six of which were related to interest rate controls, such as ceiling and floor of deposit and lending rates, fixed deposit, and lending rate. The remaining three policies were targeted credit program, required reserve ratio, and liquidity ratio. In another study, Arestis et al. (2001) used time series data from South Korea to calculate the measures of financial repression using the PCA method and the

simple arithmetic average method for four policy variables, namely ceilings on deposit and lending rates, reserve ratios for time, and demand deposits. The study found that financial restraints promoted financial development.

Chauffour & Gobezie (2019) reported that Ethiopia relied on different repressive policies to manage its financial sector, including a state-dominated banking sector, mandatory financing of priority projects and directed credit, administrative interest rates, a captive domestic market for government debt, high liquidity and capital requirements, and strict foreign exchange controls. These have resulted in imbalances in the financial sector. Moreover, an ongoing process of liberalization of the financial sector in Ethiopia was identified. Using monthly data on the Iranian economy, Hosseinidoust & Saatian (2022) examined the effect of repressive policies on bank liquidity. Real interest rate, legal reserve ratios, and unofficial exchange rates were included as variables to represent repressive policy instruments.

Rubini & Sala-i-Martin (1992) employed both theoretical and empirical methods to investigate the impact of financial repression on long-term growth using a large cross-section of 53 countries. They initially constructed a dummy variable for financial repression based on real interest rates. Subsequently, a composite weighted average index of financial repression was used following Agarwala (1983). Finally, the ratio of commercial bank reserves to the money supply was employed to measure financial repression. The results demonstrated that all of these measures had a detrimental effect on economic growth.

Battilossi (2004) conducted an empirical investigation of the public finance hypothesis and the determinants of financial repression across 16 European countries from 1950 to 1991. In testing the hypothesis, an index of financial repression comprising several variables was constructed, including the ratio of bank reserves to total bank deposits, negative real interest rates, government liabilities held by the banking system, and the M2 to GDP ratio. The findings indicated that a less efficient tax system, a less independent central bank, and higher inflation and debt were the significant determinants of higher financial repression. Zaranezhad et al. (2019) constructed a financial repression index for selected oil-exporting countries, encompassing policy variables such as real interest rates, reserve requirements, and the ratio of commercial bank debts from the government to commercial bank debts from the private sector, and the liquidity to GDP ratio.

Using time series data from 1961 to 2000 from Tunisia, Hachicha (2005) estimated the financial repression index using the PAC method, including five repressive policy variables. Two of the variables were related to interest rate restrictions, namely fixed deposits and fixed lending rates. The remaining three variables were targeted credit programs, minimum obligatory reserves, and liquidity requirements. The aggregate index appeared to reflect many policy reforms in Tunisia.

In these studies, the researchers included several policy variables encompassing the policies related to interest rates, government ownership of banks, liquidity management, exchange rate controls, and capital account controls.

Methods

Data

This study used time series data on the Bangladeshi economy from 1973 to 2022. This study included five variables to construct the composite financial repression index. Two of the five variables, namely the share of state-owned commercial banks on total loans and statutory liquidity ratio, were collected from the Bangladesh Bank (BB). The remaining variables were

collected from existing literature. Specifically, the capital account openness index (Chinn & Ito, 2006) was employed to measure restrictions on international capital movements. The real deposit rate (RDR) and interest rate restriction variables were set following Agarwala (1983) and Jafarov et al. (2019), respectively.

Formulating the Financial Repression Index

To formulate a composite financial repression index (FRI) which encompasses a range of policy variables, the methodology initially proposed Huang & Wang (2011), which was subsequently adopted by Ang & McKibbin (2007), was used. The composite index was formulated using the principal component analytical (PCA) method, in which many variables could be reduced to a smaller number while maintaining as much of the original variation as possible. As a result, issues related to multicollinearity and over-parametrization could be readily addressed.

To formulate the FRI, the following five variables from four areas of the economy were included.

1. Banking sector variable (share of state-owned bank in total loans)
2. Liquidity variable (statutory liquidity ratio/SLR)
3. External sector variable (control of international capital movements)
4. Interest rate control variable (real deposit rate and interest rate restriction)

The banking sector pays a dominant role in the Bangladeshi financial sector. The state ownership of banks in Bangladesh resulted from government-driven policy decisions. With regard to the banking sector variable, the share of state-owned banks in total loans represents the degree of government influence on the bank allocation of loans. This variable is expressed as a percentage, with 0 indicating no government influence on the bank allocation of loans and 100 indicating complete government control of the bank allocation of loans. A value between 0 and 100 indicates a partial government influence. The data on these variables were obtained from the Bangladesh Bank.

The liquidity variable, namely the statutory liquidity ratio (SLR), represents the minimum proportion of total time and demand liabilities that a commercial bank is obliged to hold as liquid assets with the central bank. A higher ratio indicates greater financial repression. In some instances, governments impose high reverse requirements compared to the optimal level, yet fail to provide returns. An increase in the ratio reduces the capacity of the banking sector to inject capital into the economy. The data on this variable were obtained from the Bangladesh Bank.

The following variable is the restrictions on international capital movement (RIC). The control of capital movements allows the government to exercise greater control over the exchange rate and the foreign reserve. In addition, the government impose restrictions on capital movements by taxing and licensing capital outflows. To assess the extent of restrictions on international capital movement, the index of capital account openness was employed (Chinn & Ito, 2006) and the value was reversed to measure the restrictions on international capital movements. The binary dummy variables used by IMF in its annual report served as the foundation for the RIC calculation. These variables codified cross-border financial transaction prohibitions. A value of 0 indicates complete control of international capital movements, whereas a negative value indicates openness to international capital movements.

The real deposit rate (RDR) variable was set following Agarwala (1983) and Roubini & Sala-i-Martin (1992). The value of RDR was set to 0 if the RDR was positive, 0.50 if the RDR was

positive but more than -5%, and 1 if the RDR was negative but less than -5% (RDR = 0 if r > 0, RDR = 0.50 if 0 > r > -5%, and RDR = 1 if r < -5%, where r = real deposit interest rate).

Another variable related to interest rate control is the Interest rate restriction (IRR) variable which reflects whether administrative and legislative restrictions are in place on the interest rates that banks charge for loans and deposits. The central bank administers several interest rates. Although the bank is permitted to set the lending rate on their loans and advances, the value of the variable was set following Jafarov et al. (2019). IRR assumes four numerical values, ranging from zero (liberalized or market-based interest rates) to 3 (the strictest controls on interest rates). A value of 1 indicates the presence of restrictions on a considerable proportion of the market, while the majority remains unrestricted. A value of 2 indicates that interest rate restrictions are comprehensive but do not encompass the entire market. This implies that IRR is applied to the dominant share of the market.

Econometric Model

To measure the composite financial repression index, the principal component analysis was performed as follows (Holland, 2019).

$$Z_1 = \delta_{11} W_{1t} + \delta_{12} W_{2t} + \cdots\cdots\cdots + \delta_{1n} W_{nt} \tag{1}$$

In matrix form $Z_1 = \delta_i^T W$

$$Z_2 = \delta_{21} W_{1t} + \delta_{22} W_{2t} + \cdots\cdots\cdots + \delta_{2n} W_{nt} \tag{2}$$

In matrix form $Z_2 = \delta_i^T W$

For all components, the matrix form was as follows.

$$Z = WA \tag{3}$$

The rows of matrix A represent the variance-covariance matrix of the data set and are also referred to as the eigenvectors Sw. The elements of an eigenvector are known as loadings indicating weights (δ_{ij}). The variance-covariance matrix of the principal components is referred to as the eigenvalues, represented by the elements of the diagonal of matrix S_Z. In other words, the variance explained by each principal component is indicated by the eigenvalues. A scree plot displays the eigenvalues.

The specific form of the PCA performed in this study can be written as follows.

$$\begin{gathered} Z_1 = \delta_{11} IRR_t + \delta_{12} RDR_t + \delta_{13} SLR_t + \delta_{14} RIC_t + \delta_{15} SCB\_A_t \\ Z_2 = \delta_{21} IRR_t + \delta_{22} RDR_t + \delta_{23} SLR_t + \delta_{24} RIC_t + \delta_{25} SCB\_A_t \\ \delta_1^2 + \delta_2^2 + \delta_3^2 + \delta_4^2 + \delta_5^2 = 1 \\ \sum_{i=1}^{5} \delta_i^2 = 1 \end{gathered} \tag{4}$$

Where,

Table 1: Variable Operational Definition

Variable	Definition	Source
RIC	Restrictions on international capital movements	Chinn & Ito (2006)
SLR	Statutory liquidity ratio	Bangladesh Bank

Variable	Definition	Source
SCB_A	Share of the state-owned banks in total loans	Bangladesh Bank
IRR	Interest rate restrictions	Jafarov et al. (2019)
RDR	Real deposit rate	Authors' calculation based on Agarwala (1983) and Roubini & Sala-i-Martin (1992)

The selection of the optimum number of principal components (PCs) to include and the number to be disregarded is influenced by numerous factors. The most common criterion is including PCs with eigenvalues greater than one. Another criterion is considering all PCs up to a certain total percentage of variance explained, for example, 80 % or 90 %. Finally, PCs that contribute only a minimum increment to the total variance explained can be excluded.

Prior to performing the PCA, it is essential to assess the distribution of variables to ensure that they are normally distributed. In addition, the variable should be transformed to reduce the skewness of the variable, if necessary. Outliers must be removed from the data set. Otherwise, the PCA results will be biased.

Results

Before formulating a composite financial repression index (FRI), a correlation analysis was conducted among the variables. The results are presented in Table 2, indicating a statistically significant high correlation among the variables.

Table 2: Correlation among Policy Variables

Correlation (p-Value)	IRR	Ka_con	RDR	SCB_A	SLR
IRR	1.000				
RIC	0.695 (0.000)	1.000			
RDR	0.436 (0.002)	0.327 (0.022)	1.00		
SCB_A	0.840 (0.000)	0.606 (0.000)	0.389 (0.006)	1.000	
SLR	0.485 (0.000)	0.400 (0.005)	-0.080 (0.584)	0.629 (0.000)	1.000

The results of the PCA are presented in Table 3. The eigenvalues indicate that the first and second components explain 60% and 22% of the standardized variance. The first two components were selected because their eigenvalues were greater than one and collectively explain 82% of the total variance among the variables. The variance percentage was then adjusted to sum to one and the adjusted values were used as the weights to compute the composite index. Previous studies such as Huang & Wang (2011) and Ang & McKibbin (2007) also selected the first two components with eigenvalues greater than one. They also adjusted the variance percentage to sum to one.

Table 3: Results of the Principal Component Analysis

Component	Eigenvalue	Difference	Proportion	Cumulative
PC-1	3.014	1.926	0.603	0.603
PC-2	1.088	0.604	0.218	0.820
PC-3	0.484	0.197	0.100	0.917
PC-4	0.287	0.159	0.057	0.974
PC-5	0.127		0.026	1.00

Figure 1 shows the scree plot which illustrates the eigenvalues in relation to the principal components. It is evident that only two components have eigenvalues greater than one. The eigenvalues declined dramatically after the second principal components.

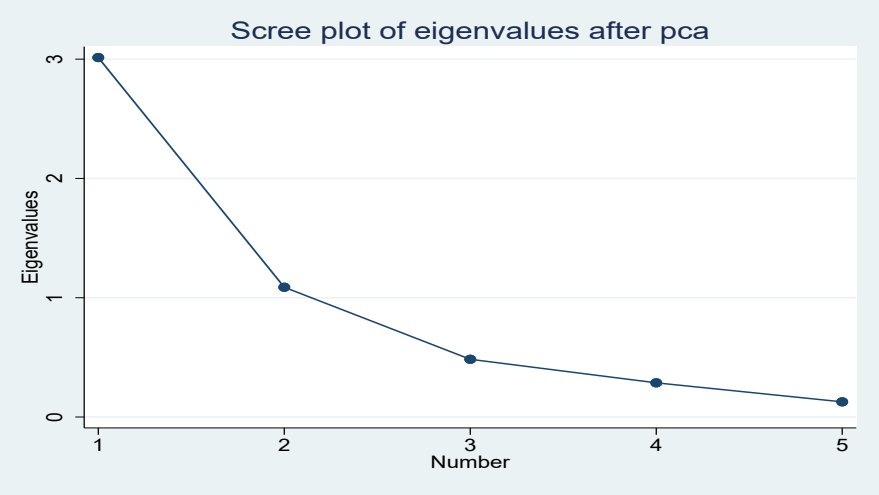

Figure 1: Scree Plot

In particular, the first component was weighted at 78%, while the second component was weighted 22%. In other words, the composite index was calculated using the following equation.

$$FRI_t = 0.78PC_{1t} + 0.22PC_{2t} \quad (5)$$

The Kaiser-Meyer-Olkin (KMO) test was employed to assess the suitability of data for factor analysis (Cerny & Kaiser, 1977). The test determines the proportion of the total variation among the variables that might be attributed to common variance. The statistic measures the sampling adequacy of each variable included in the model and the model as a whole. The higher the KMO value, the more suitable the data are for the analysis. The estimated value was 0.708, which was considerably higher than the threshold level of 0.50.

Table 4: KMO Test Results of Sampling Adequacy

Variable	Kaiser-Meyer-Olkin Test of Sampling Adequacy
RIC	0.853
SLR	0.592
SCB_A	0.675
IRR	0.730
RDR	0.587
Overall	0.700

Graphical Illustration

The financial repression index was calculated using 1973 as the base year (Figure 1). The index is a reliable indicator of the policy measures implemented during the sample period. A decrease in the index indicates the liberalization of the financial sector. In contrast, extreme peaks indicate the implementation of significant policy reforms following major economic crises.

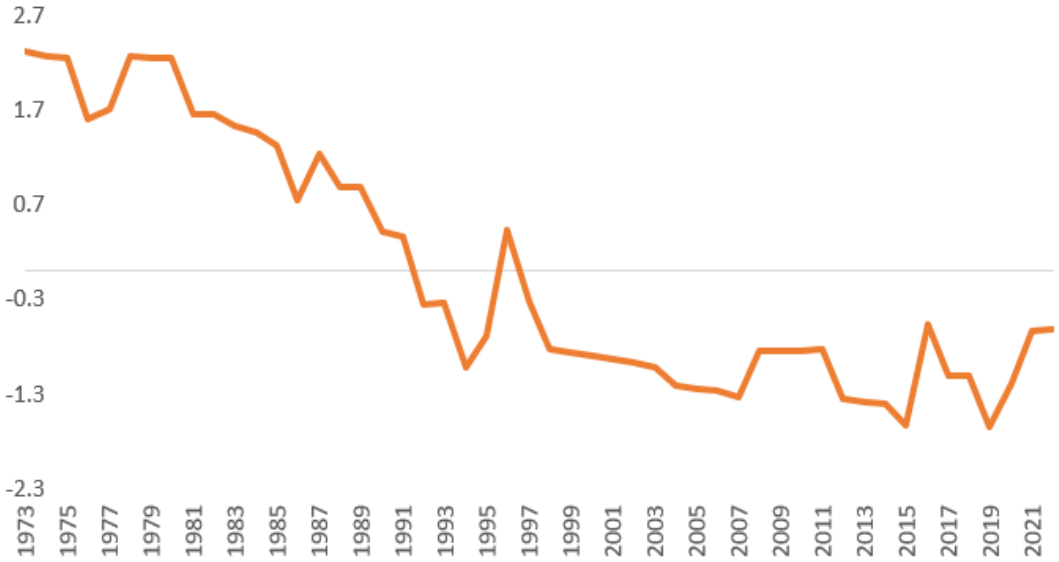

Figure 2: Financial Repression Index

In 1976, the government established the stock exchange and the Bangladesh Investment Corporation in an effort to liberalize the financial sector (Saidjada & Jahan, 2018). Subsequently, in 1978, the government removed all restrictions on private investment to encourage private investors. Financial liberalization commenced in the1980s with the privatization of most state-owned enterprises. In addition, the implementation of a new industrial policy was a significant move toward liberalization, paving the way for an increasing role of the private sector (World Bank, 1995). Moreover, the liberalization of the financial sector was boosted by the enactment of the Bank Company Act in 1991, along with the implementation of the financial sector reform program in 1992.

The period between 1996 and 1997 saw a rise in financial repression. This can be attributed to the policies implemented in the aftermath of the Bangladeshi capital market crash and the Asian financial crisis. Following 1997, the liberalization process continued with the implementation of the Commercial Bank Restructuring Project. In 2004, Bangladesh transitioned to a floating exchange rate regime. The FR index increased slightly during the global financial crisis and the capital market catastrophe in Bangladesh in 2009. Subsequently, the liberalization of the financial sector continued with the establishment of new private commercial banks and the automation of bank branches to accelerate financial deepening. In 2016, the Central Bank appointed observers to the boards of banks and the Ministry of Finance exerted influence to reinforce good practices, thereby exerting a repressive influence on the financial sector. The index experienced an upturn following the imposition of ceilings on lending rates and floors on deposit rates in 2020.

The general movement of the index is consistent with the different policy reforms in the financial sector of the Bangladeshi economy. The FR index indicates that the financial sector in Bangladesh has been gradually liberalized, particularly following the implementation of the financial sector reform program in the 19990s. During the 1990s, similar reforms were also implemented in China (Huang & Wang, 2011) and continued later on.

Reliability Test

To assess the reliability of the FR index, the financial repression index-2 (FRI-2) was calculated (Ang & McKibbin, 2007). The index was calculated based on a number of policy variables, including statutory reserve ratio, cash reserve ratio, maximum lending rate for priority sector, minimum lending rate, maximum lending rate, minimum deposit rate, and maximum deposit rate. The PCA was employed to calculate the FRI-2 index and to compare it with the FRI-1 index (Huang & Wang, 2011). The results are presented in Figure 3. Both indices showed a similar trend, with FRI-1 demonstrating greater volatility compared to FRI-2. This can be attributed to the fact that this approach represents a more comprehensive measure of financial repression.

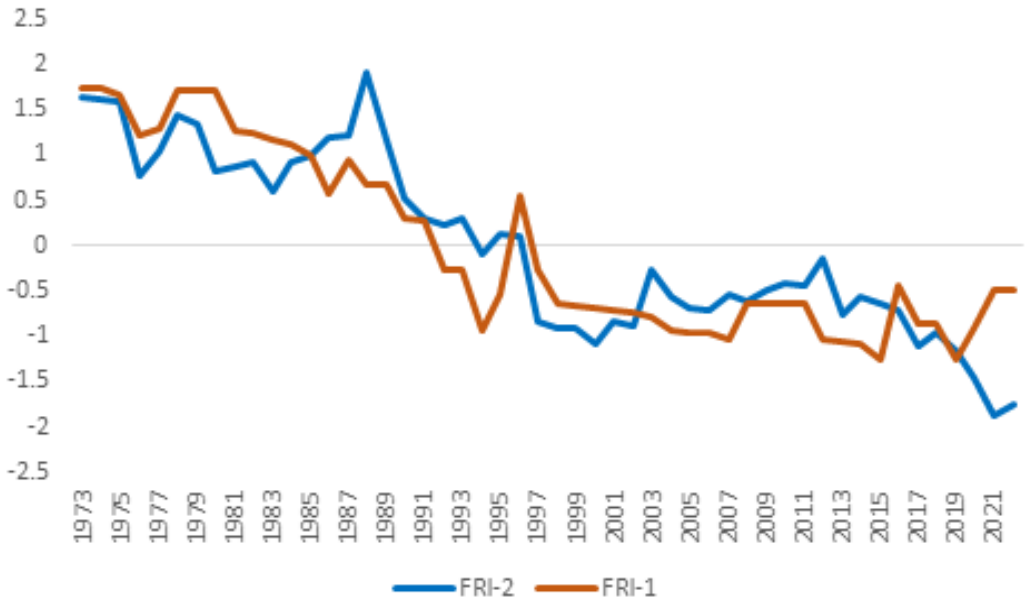

Figure 3: Financial Repression Indices

Table 5: Major Policy Reforms in the Financial Sector

Privatization	Establishment of Private Commercial Banks	Establishment of National Commission on Money Exchange and Credit	Financial Sector Reform Program
Privatization of 116 enterprises between 1975 and 1978, and the establishment of the Investment Corporation of Bangladesh in 1976, and the opening of the stock exchange.	In 1982, the government approved the establishment of private commercial banks and denationalized the state-owned commercial banks (SCBs). In addition, in the same year, the government implemented the New Industrial Policy to foster the growth of the private sector.	In 1986, the National Commission on Money Exchange and Credit was established. Moreover, a policy prohibiting individuals who had defaulted on their loans from accessing further credit was implemented.	Under the Financial Sector Reform Program (FSRP), significant reforms occurred in the financial sector in the early 1990s, including the adoption of new laws such as the Financial Loan Court Act of 1990 and the Bank Company Act of 1991.

Exchange Rate Unification	Structural Adjustment Performance Review	Transitioned To Floating Exchange Rate	Standardizing the Loan Classification
In 1994, the current account convertibility was initiated and the exchange rate was unified. In 1996, the Banking Reform Committee formulated cells within SCBs.	In 2000, the Structural Adjustment Performance Review initiative was implemented to improve the supervision and regulation of central banks. In 2003, the Money Loan Court Act was enacted and amended the Bank Company Act for quick resolution of filed cases.	In 2004, Bangladesh transitioned to a floating exchange rate regime. In 2006, it was made mandatory to follow the Credit Risk Grading manual to prevent the emergence of new non-performing loans (NPLs). Moreover, the regulatory power of SCBs was transferred from the Ministry of Finance to the Bangladesh Bank.	In 2012, the central bank tightened loan classification to make it consistent with international practices.
Empowering Central Bank		**Amendments To Bank-Related Laws**	**Lending Rate Cap**
Central Bank was granted the authority to remove the Managing Director of SCBs in 2013. Moreover, SCBs signed an MoU with the Central Bank to fulfil quantitative targets such as reducing NPLs.	Central Bank placed observers on the boards of banks with deteriorating internal management in 2015. Moreover, the restructuring of significant loans with a total value of Tk5 billons was initiated.	In 2019, reform measures were implemented, including amendments to bank-related laws. In this case, the central bank conducted a special audit to identify irregularities in the banking sector and introduced a new guideline on risk management.	In 2020 ceiling on lending rates was imposed, setting it at 9.00 percent.

Conclusion

This study employed empirical methods to estimate the patterns of financial repression in the economy of Bangladesh over the past 50 years. Repressive policies are typically implemented to achieve certain public objectives. The most common objectives are to gain cheap loans by the government from the financial sector, to support the infant financial sector at an early stage of development, to provide sufficient resources to priority sectors, and to ensure financial stability. Although the government occasionally employed repressive policies to achieve public policy objectives, financial repression ultimately led to market distortions.

The principal component analysis (PCA) was employed to construct a summary measure of financial repression. In constructing the aggregate financial repression index, five policy variables were considered: real deposit rate, interest rate restriction, control of the capital account, the share of state-owned banks in total loans, and statuary liquidity ratio. The reliability of the results was evaluated using different tests. To assess the reliability of the FR index, the financial repression index-2 (FRI-2) was calculated following Ang & McKibbin (2007). The overall patterns of the indices remained largely consistent, which indicates the reliability of the results. The trend of the financial repression index (FRI) indicates that the economy of Bangladesh underwent a significant transformation during the study period. The liberalization of the financial sector was significantly constrained during the mid-1990s and mid-2020s. In recent years, the imposition of a ceiling on lending rates has led to a resurgence of financial repression, particularly in 2020.

Policy makers have the authority to take proper measures to liberalize the financial sector while maintaining financial stability. In this case, they should reconsider the policy of interest rate restrictions which is already in effect.

Limitations of The Study

This study included five variables to construct the composite financial repression index for Bangladesh based on the availability of data. The analysis can be improved by adding more variables that are relevant to the financial sector of Bangladesh.

Declaration

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Conflict of Interest

The study findings do not conflict with anyone's interest.

Availability of Data and Materials

The author uses the secondary data in this analysis. All data are available in the sources mentioned in the methodology section.

Authors' Contribution

Since there was no such index, The study contributes to the literature by providing an aggregate index of financial repression for Bangladesh's economy showing the extent of repression in the financial sector.

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